The Meteorological Office

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1998 Global Temperature; Highest by a wide margin

The earth's temperature in 1998 was easily the highest in the global record reaching back to 1860. The global mean temperature is expected to be 0.58°C above the recent long term average based on the period 1961-1990. The previous warmest year globally, 1997, was 0.43°C warmer than average.

Both the Northern and Southern hemispheres also had their warmest years on record in 1998; respectively 0.65°C and 0.49°C warmer than normal. These results were announced today by the Met. Office's Hadley Centre and the University of East Anglia's Climate Research Unit.

David Parker, Head of Climate Monitoring at the Hadley Centre says: "The top ten warmest years have all been since 1983, with seven of them since 1990. This year has continued the gradual warming trend seen over the past 100 years; global temperatures in the 1990s are almost 0.7°C above those at the end of the 19th century".

The estimates for 1998 are based on observations up to mid-December from a network of ships, buoys and land-based weather stations. Although the network has major gaps especially in the tropics, the Southern Ocean and Antarctica, statistical tests show that it is exceedingly unlikely that a perfect network would have made any other year as warm as 1998. Global estimates such as this are only possible thanks to the excellent long-standing free exchange of weather information between all countries of the world, facilitated by the Geneva-based World Meteorological Organisation.

Prof Phil Jones at the University of East Anglia says: "A major contribution to the warmth of 1998 came from the strong 1997-8 El Nino, the strongest since records began around 1870. This is a natural warming of the tropical east Pacific which occurs every few years, with ocean surface temperatures several degrees warmer than normal from the coast of Peru to the date line. However the El Nino ended in mid-1998 and was replaced by slightly cool "La Nina" conditions; as a result, 1999 is not expected to be as warm as 1998 for the globe as a whole".

The lowest 5km of the atmosphere, where temperatures are monitored regularly by weather balloons and satellites, was also the warmest it has ever been since records began in the 1960s. In contrast, the lower stratosphere in 1998 was colder than usual, though not quite as cold as in 1995-1997. The lower stratosphere is expected to cool due to both increased carbon dioxide and depleted ozone.

Tomorrow, the World Meteorological Organisation will issue a more detailed statement about global weather, and stratospheric ozone depletion, in 1998.

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NOTES:

1. Estimates of 1998 global temperature are based on measurements from over a thousand land stations up to the end of November and a few hundred in early December, and sea temperatures from a rather larger number of ships and buoys up to mid-December. Because of the large inertia in the ocean part of the climate system, it is unlikely that these estimates will be more than one or two hundredths of a degree different from the final figures, which will be available at the end of January 1999 when data for the whole of 1998 have been received and analysed.
2. The generally accepted mean global average temperature on which all these figures are based is 14.0°C.